

The Hawaii-based Longline Logbook Summary Report April–June 2009¹

Pacific Islands Fisheries Science Center
Fisheries Monitoring and Socioeconomics Division

This report summarizes data on fish catch and fishing effort by Hawaii-based longline vessels during the second quarter of 2009 (Q2-2009). Results are based on the date gear was hauled, as reported by vessel operators to the National Marine Fisheries Service in Federal logbooks of daily fishing activity. The report covers longline operations for fishing trips completed in the second quarter of 2009 and most, but not all, Q2-2009 data from trips that began late in the second quarter and continued into the third quarter of 2009. Therefore, the Q2-2009 summary statistics reported here are preliminary.

During Q2-2009, 123 vessels were active in the Hawaii-based fleet, the same number of vessels as in Q2-2008 (Table 1, Fig. 1). They made 364 longline trips (34 less than in Q2-2008), including 311 using deep-set gear to target tuna (55 less than in Q2-2008) and 53 using shallow-set gear to target swordfish (11 more than in Q2-2008; Fig. 2). During Q2-2009, the fleet deployed 9.3 million hooks, 900,000 less than in Q2-2008 (Fig. 3). They fished mainly on the high seas outside the U.S. Exclusive Economic Zone (EEZ) (77% of the total hooks set), followed by EEZ waters of the main Hawaiian Islands (MHI) (11%), the U.S. Pacific Remote Island Areas (PRIA, consisting of U.S. possessions Wake Island, Jarvis Island, Howland Island, Baker Island, Kingman Reef, Palmyra Atoll, and Johnston Atoll) (1%), and the EEZ of the Northwestern Hawaiian Islands (NWHI) (<1%).

In Q2-2009, the Hawaii longline fleet caught 21,044 bigeye tuna (Fig. 4); 82% were caught in waters outside the U.S. EEZ and 7% in the MHI EEZ. The bigeye tuna catch-per-unit-of-effort (CPUE) on tuna-targeted trips was 2.5 fish per 1000 hooks, well below the Q2-2008 CPUE of 3.6 (Fig. 5). The albacore catch and CPUE on tuna-targeted trips in Q2-2009 were 1,777 fish and 0.21 fish per 1000 hooks, respectively (Figs. 6-7). The yellowfin tuna catch and CPUE on tuna-targeted trips in Q2-2009 were 3,305 fish and 0.38 fish per 1000 hooks, respectively (Figs. 8-9).

The Q2-2009 swordfish catch was 9,539 fish, 40% higher than in Q2-2008 (Fig. 10). The larger swordfish catch is attributed to more shallow sets made in 2009. In Q2-2009, swordfish CPUE on shallow-set swordfish-targeted trips was 9.9 fish per 1000 hooks, 24% lower than in Q2-2008 (Fig. 11).

The striped marlin catch in Q2-2009 (2,495 fish) was about 50% lower than in Q2-2008, as was the striped marlin CPUE on tuna-targeted trips (0.24 fish per 1000 hooks); the latter was a record low for the second quarter (Figs. 12-13). Conversely, the blue marlin catch (1,810 fish) and CPUE on tuna-targeted trips (0.20 fish per 1000 hooks) were higher in Q2-2009 than in Q2-2008 by 14% and 54%, respectively (Figs. 14-15).

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The fleet caught 17,560 sharks in Q2-2009, of which 533 (3%) were kept. Blue shark comprised 68% of the total shark catch (12,013 fish) (Fig. 16). Blue shark CPUE on shallow-set swordfish-targeted trips was a second quarter record low 3.1 fish per 1000 hooks (Fig. 17).

In Q2-2009, the Hawaii longline catch of other key pelagic species included 6,900 mahimahi (Fig. 18) with a CPUE of 0.63 fish per 1000 hooks on tuna-targeted trips (Fig. 19); a second quarter record high 4,250 moonfish (Fig. 20) with a CPUE of 0.50 fish per 1000 hooks on tuna-targeted trips (Fig. 21); 12,776 pomfret (Fig. 22) with a CPUE of 1.5 fish per 1000 hooks on tuna-targeted trips (Fig. 23); and 3,594 wahoo (Fig. 24) with a CPUE of 0.42 fish per 1000 hooks on tuna-targeted trips (Fig. 25). A high percentage of the catch of these species was kept.

The summary statistics in Table 1 are based on logbook records from all fishing areas combined and all types of longline trips—those targeting swordfish and those aimed at catching tuna. Hence, the CPUE figures in Table 1 differ from those reported above, which were calculated using data exclusively from tuna-targeted trips or swordfish-targeted trips, depending on the species of interest.

The longline logbook statistics reported above refer to all fishing areas combined. Q2-2009 summary catch and effort were also compiled by several geographical sub-areas including: the MHI EEZ; the NWHI EEZ; the PRIA EEZ; the combined EEZ of MHI, NWHI and PRIA; and waters outside the U.S. EEZ. These statistics are presented in Tables 2-6. Q2-2009 summary statistics for the entire fishing area are also presented for each distinct trip type: swordfish-targeted trips using shallow-set gear (Table 7) and tuna-targeted trips deploying deep-set gear (Table 8).

This report is available in PDF format on the PIFSC Web site at <http://www.pifsc.noaa.gov/fmsd/reports.php>. The Web site also provides quarterly and yearly charts and an archive of quarterly and annual summary tables of fish catch and fishing effort from 1991 to the present. The statistics in the online graphs and archived tables are updated periodically as new records are added to the database and corrections are made.

Table 1. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived from NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 8/19/2009 9:27:17AM].

Report Coverage					Number of vessels active	123
Time Period	2nd Quarter 2009				Number of trips	364
Fishing Area	All Areas				Number of sets	4,610
Trip Types	All Trip Types				Number of hooks set	9,305,227

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	1,810	1,799	11	0.19
Striped marlin	2,495	2,464	31	0.27
Shortbill spearfish	2,346	2,325	21	0.25
Swordfish	9,539	8,957	582	1.03
Other billfishes	173	171	2	0.02
Total	16,363	15,716	647	1.76
Sharks				
Blue shark	12,013	37	11,976	1.29
Mako sharks	778	328	450	0.08
Thresher sharks	3,907	101	3,806	0.42
Oceanic whitetip shark	521	53	468	0.06
Silky shark	44	0	44	0.00
Other sharks	297	14	283	0.03
Total	17,560	533	17,027	1.89
Tunas				
Albacore	1,777	1,770	7	0.19
Bigeye tuna	21,044	20,915	129	2.26
Yellowfin tuna	3,305	3,271	34	0.36
Bluefin tuna	8	8	0	0.00
Skipjack tuna	6,028	5,690	338	0.65
Other tunas	2	2	0	0.00
Total	32,164	31,656	508	3.46
Other PMUS				
Mahimahi	6,900	6,831	69	0.74
Moonfish	4,250	4,236	14	0.46
Wahoo	3,594	3,578	16	0.39
Oilfish	6,416	6,279	137	0.69
Pomfret	12,776	12,749	27	1.37
Total	33,936	33,673	263	3.65
Total PMUS	100,023	81,578	18,445	10.75
Total Non-PMUS	1,019	392	627	0.11
Total All Species	101,042	81,970	1,019	10.86

Table 2. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived from NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 8/19/2009 9:27:17AM].

Report Coverage					Number of vessels active	74
Time Period	2nd Quarter 2009				Number of trips	122
Fishing Area	Main Hawaiian Islands EEZ				Number of sets	668
Trip Types	All Trip Types				Number of hooks set	1,144,923

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	194	192	2	0.17
Striped marlin	583	573	10	0.51
Shortbill spearfish	449	447	2	0.39
Swordfish	2,192	2,070	122	1.91
Other billfishes	3	3	0	0.00
Total	3,421	3,285	136	2.99
Sharks				
Blue shark	1,524	10	1,514	1.33
Mako sharks	140	106	34	0.12
Thresher sharks	101	19	82	0.09
Oceanic whitetip shark	28	6	22	0.02
Silky shark	2	0	2	0.00
Other sharks	10	4	6	0.01
Total	1,805	145	1,660	1.58
Tunas				
Albacore	64	64	0	0.06
Bigeye tuna	1,414	1,402	12	1.24
Yellowfin tuna	266	265	1	0.23
Bluefin tuna	0	0	0	0.00
Skipjack tuna	552	496	56	0.48
Other tunas	0	0	0	0.00
Total	2,296	2,227	69	2.01
Other PMUS				
Mahimahi	626	622	4	0.55
Moonfish	421	418	3	0.37
Wahoo	325	321	4	0.28
Oilfish	1,126	1,092	34	0.98
Pomfret	576	573	3	0.50
Total	3,074	3,026	48	2.68
Total PMUS	10,596	8,683	1,913	9.25
Total Non-PMUS	270	157	113	0.24
Total All Species	10,866	8,840	270	9.49

Table 3. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived from NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 8/19/2009 9:27:17AM].

Report Coverage					Number of vessels active	29
Time Period	2nd Quarter 2009				Number of trips	37
Fishing Area	Northwestern Hawaiian Islands EEZ				Number of sets	227
Trip Types	All Trip Types				Number of hooks set	374,483

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	84	84	0	0.22
Striped marlin	291	289	2	0.78
Shortbill spearfish	74	74	0	0.20
Swordfish	1,687	1,558	129	4.50
Other billfishes	2	2	0	0.01
Total	2,138	2,007	131	5.71
Sharks				
Blue shark	540	3	537	1.44
Mako sharks	84	47	37	0.22
Thresher sharks	20	8	12	0.05
Oceanic whitetip shark	12	4	8	0.03
Silky shark	1	0	1	0.00
Other sharks	4	1	3	0.01
Total	661	63	598	1.77
Tunas				
Albacore	126	126	0	0.34
Bigeye tuna	350	350	0	0.93
Yellowfin tuna	63	63	0	0.17
Bluefin tuna	3	3	0	0.01
Skipjack tuna	87	87	0	0.23
Other tunas	0	0	0	0.00
Total	629	629	0	1.68
Other PMUS				
Mahimahi	411	408	3	1.10
Moonfish	248	248	0	0.66
Wahoo	79	79	0	0.21
Oilfish	395	393	2	1.05
Pomfret	356	356	0	0.95
Total	1,489	1,484	5	3.98
Total PMUS	4,917	4,183	734	13.13
Total Non-PMUS	28	8	20	0.07
Total All Species	4,945	4,191	28	13.20

Table 4. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived from NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 8/19/2009 9:27:17AM].

Report Coverage			Number of vessels active36	
Time Period	2nd Quarter 2009		Number of trips42	
Fishing Area	Pacific Remote Island Areas (PRIA) EEZ		Number of sets252	
Trip Types	All Trip Types		Number of hooks set586,564	

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	125	123	2	0.21
Striped marlin	88	88	0	0.15
Shortbill spearfish	114	107	7	0.19
Swordfish	85	72	13	0.14
Other billfishes	17	17	0	0.03
Total	429	407	22	0.73
Sharks				
Blue shark	523	2	521	0.89
Mako sharks	79	5	74	0.13
Thresher sharks	425	1	424	0.72
Oceanic whitetip shark	296	24	272	0.50
Silky shark	38	0	38	0.06
Other sharks	215	8	207	0.37
Total	1,576	40	1,536	2.69
Tunas				
Albacore	185	182	3	0.32
Bigeye tuna	1,926	1,909	17	3.28
Yellowfin tuna	1,453	1,427	26	2.48
Bluefin tuna	0	0	0	0.00
Skipjack tuna	815	654	161	1.39
Other tunas	0	0	0	0.00
Total	4,379	4,172	207	7.47
Other PMUS				
Mahimahi	78	77	1	0.13
Moonfish	15	15	0	0.03
Wahoo	251	245	6	0.43
Oilfish	266	266	0	0.45
Pomfret	800	799	1	1.36
Total	1,410	1,402	8	2.40
Total PMUS	7,794	6,021	1,773	13.29
Total Non-PMUS	58	8	50	0.10

Total All Species	7,852	6,029	58	13.39
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Table 5. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived from NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 8/19/2009 9:27:17AM].

Report Coverage					Number of vessels active	96
Time Period	2nd Quarter 2009				Number of trips	171
Fishing Area	Hawaiian Islands EEZ + PRIA EEZ				Number of sets	1,147
Trip Types	All Trip Types				Number of hooks set	2,105,970

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	403	399	4	0.19
Striped marlin	962	950	12	0.46
Shortbill spearfish	637	628	9	0.30
Swordfish	3,964	3,700	264	1.88
Other billfishes	22	22	0	0.01
Total	5,988	5,699	289	2.84
Sharks				
Blue shark	2,587	15	2,572	1.23
Mako sharks	303	158	145	0.14
Thresher sharks	546	28	518	0.26
Oceanic whitetip shark	336	34	302	0.16
Silky shark	41	0	41	0.02
Other sharks	229	13	216	0.11
Total	4,042	248	3,794	1.92
Tunas				
Albacore	375	372	3	0.18
Bigeye tuna	3,690	3,661	29	1.75
Yellowfin tuna	1,782	1,755	27	0.85
Bluefin tuna	3	3	0	0.00
Skipjack tuna	1,454	1,237	217	0.69
Other tunas	0	0	0	0.00
Total	7,304	7,028	276	3.47
Other PMUS				
Mahimahi	1,115	1,107	8	0.53
Moonfish	684	681	3	0.32
Wahoo	655	645	10	0.31
Oilfish	1,787	1,751	36	0.85
Pomfret	1,732	1,728	4	0.82
Total	5,973	5,912	61	2.84
Total PMUS	23,307	18,887	4,420	11.07
Total Non-PMUS	356	173	183	0.17
Total All Species	23,663	19,060	356	11.24

Table 6. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived from NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 8/19/2009 9:27:17AM].

Report Coverage					Number of vessels active	122
Time Period	2nd Quarter 2009				Number of trips	324
Fishing Area	Outside U.S. EEZ				Number of sets	3,463
Trip Types	All Trip Types				Number of hooks set	7,199,257

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	1,407	1,400	7	0.20
Striped marlin	1,533	1,514	19	0.21
Shortbill spearfish	1,709	1,697	12	0.24
Swordfish	5,575	5,257	318	0.77
Other billfishes	151	149	2	0.02
Total	10,375	10,017	358	1.44
Sharks				
Blue shark	9,426	22	9,404	1.31
Mako sharks	475	170	305	0.07
Thresher sharks	3,361	73	3,288	0.47
Oceanic whitetip shark	185	19	166	0.03
Silky shark	3	0	3	0.00
Other sharks	68	1	67	0.01
Total	13,518	285	13,233	1.88
Tunas				
Albacore	1,402	1,398	4	0.19
Bigeye tuna	17,354	17,254	100	2.41
Yellowfin tuna	1,523	1,516	7	0.21
Bluefin tuna	5	5	0	0.00
Skipjack tuna	4,574	4,453	121	0.64
Other tunas	2	2	0	0.00
Total	24,860	24,628	232	3.45
Other PMUS				
Mahimahi	5,785	5,724	61	0.80
Moonfish	3,566	3,555	11	0.50
Wahoo	2,939	2,933	6	0.41
Oilfish	4,629	4,528	101	0.64
Pomfret	11,044	11,021	23	1.53
Total	27,963	27,761	202	3.88
Total PMUS	76,716	62,691	14,025	10.66
Total Non-PMUS	663	219	444	0.09
Total All Species				
	77,379	62,910	663	10.75

Table 7. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived from NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 8/19/2009 9:27:17AM].

Report Coverage					Number of vessels active	25
Time Period	2nd Quarter 2009				Number of trips	53
Fishing Area	All Areas				Number of sets	825
Trip Types	Swordfish Targeted Trips				Number of hooks set	808,449

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	132	129	3	0.16
Striped marlin	460	446	14	0.57
Shortbill spearfish	55	53	2	0.07
Swordfish	7,992	7,512	480	9.89
Other billfishes	1	1	0	0.00
Total	8,640	8,141	499	10.69
Sharks				
Blue shark	2,484	4	2,480	3.07
Mako sharks	254	101	153	0.31
Thresher sharks	51	2	49	0.06
Oceanic whitetip shark	35	11	24	0.04
Silky shark	3	0	3	0.00
Other sharks	18	2	16	0.02
Total	2,845	120	2,725	3.52
Tunas				
Albacore	8	4	4	0.01
Bigeye tuna	200	199	1	0.25
Yellowfin tuna	93	93	0	0.12
Bluefin tuna	7	7	0	0.01
Skipjack tuna	40	39	1	0.05
Other tunas	0	0	0	0.00
Total	348	342	6	0.43
Other PMUS				
Mahimahi	1,546	1,519	27	1.91
Moonfish	41	38	3	0.05
Wahoo	26	26	0	0.03
Oilfish	1,569	1,489	80	1.94
Pomfret	30	29	1	0.04
Total	3,212	3,101	111	3.97
Total PMUS	15,045	11,704	3,341	18.61
Total Non-PMUS	11	9	2	0.01
Total All Species				
	15,056	11,713	11	18.62

Table 8. Quarterly summary report of fishing effort and catch statistics for U.S. longline vessels landing in Hawaii as derived from NMFS Western Pacific Daily Longline Fishing Log records. [PIFSC Information Management System, Longline Logbook Data, 8/19/2009 9:27:17AM].

Report Coverage			Number of vessels active111	
Time Period	2nd Quarter 2009	Number of trips311		
Fishing Area	All Areas	Number of sets3,785		
Trip Types	Tuna Targeted Trips	Number of hooks set8,496,778		

Pelagic Management Unit Species (PMUS)	Number Caught	Number Kept	Number Released	CPUE - Number Caught per 1000 hooks
Billfishes				
Blue marlin	1,678	1,670	8	0.20
Striped marlin	2,035	2,018	17	0.24
Shortbill spearfish	2,291	2,272	19	0.27
Swordfish	1,547	1,445	102	0.18
Other billfishes	172	170	2	0.02
Total	7,723	7,575	148	0.91
Sharks				
Blue shark	9,529	33	9,496	1.12
Mako sharks	524	227	297	0.06
Thresher sharks	3,856	99	3,757	0.45
Oceanic whitetip shark	486	42	444	0.06
Silky shark	41	0	41	0.00
Other sharks	279	12	267	0.03
Total	14,715	413	14,302	1.73
Tunas				
Albacore	1,769	1,766	3	0.21
Bigeye tuna	20,844	20,716	128	2.45
Yellowfin tuna	3,212	3,178	34	0.38
Bluefin tuna	1	1	0	0.00
Skipjack tuna	5,988	5,651	337	0.70
Other tunas	2	2	0	0.00
Total	31,816	31,314	502	3.74
Other PMUS				
Mahimahi	5,354	5,312	42	0.63
Moonfish	4,209	4,198	11	0.50
Wahoo	3,568	3,552	16	0.42
Oilfish	4,847	4,790	57	0.57
Pomfret	12,746	12,720	26	1.50
Total	30,724	30,572	152	3.62
Total PMUS	84,978	69,874	15,104	10.00
Total Non-PMUS	1,008	383	625	0.12
Total All Species	85,986	70,257	1,008	10.12

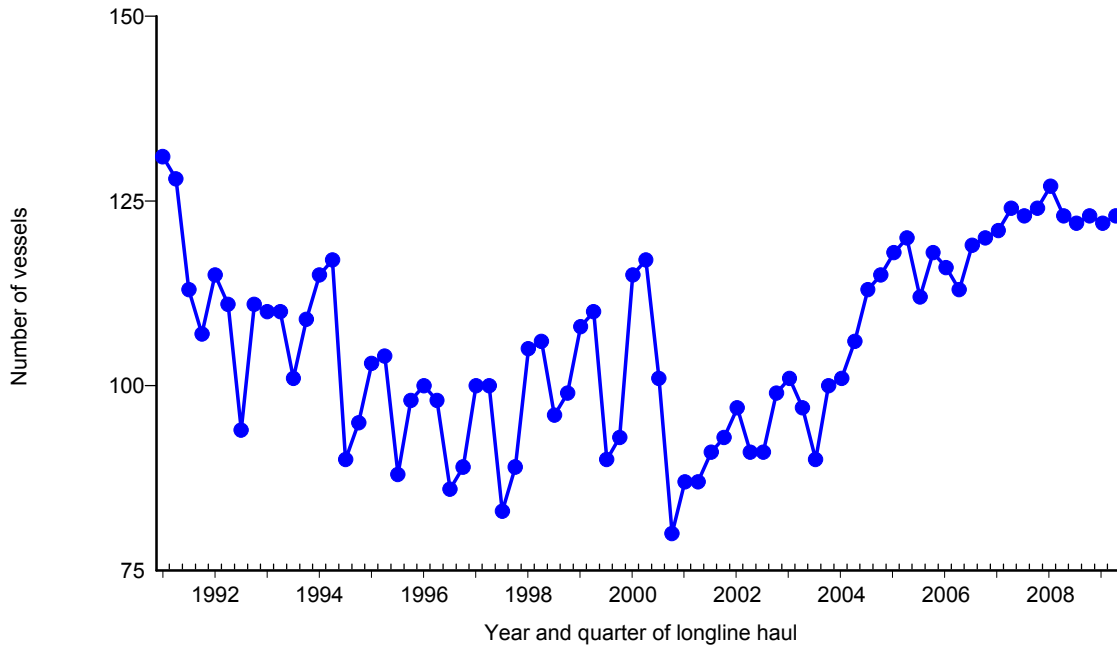


Figure 1. Number of active longline vessels based and landing in Hawaii, by quarter, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:39:22PM]

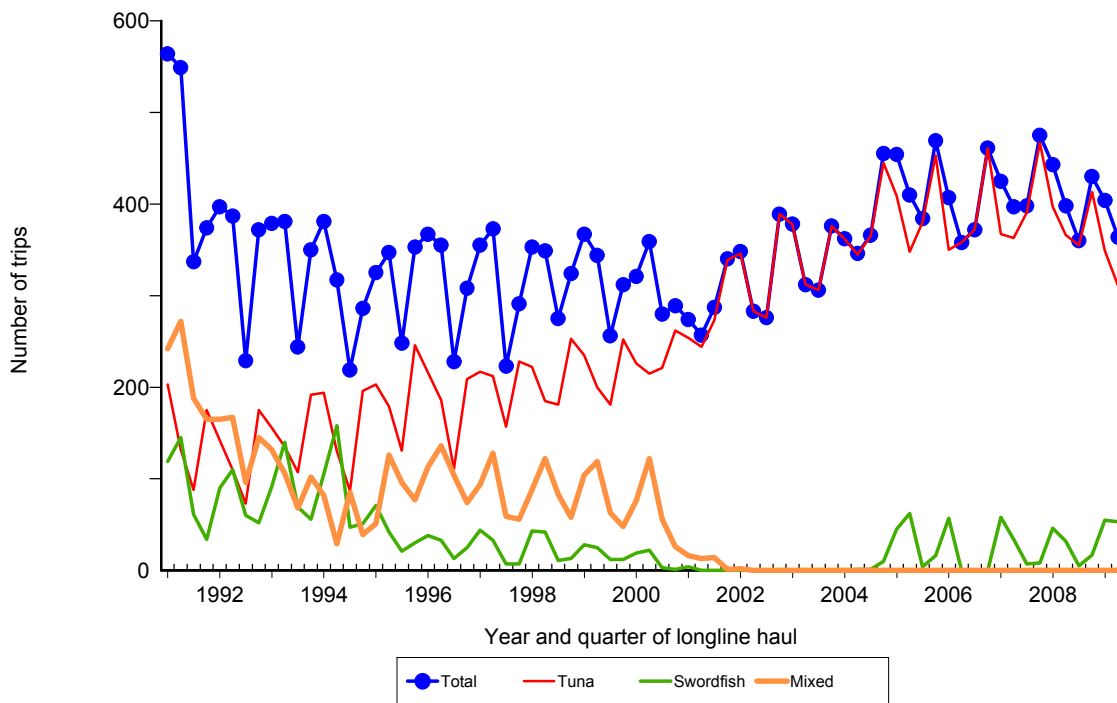


Figure 2. Number of fishing trips by longline vessels based and landing in Hawaii, by quarter and trip type, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:39:22PM]

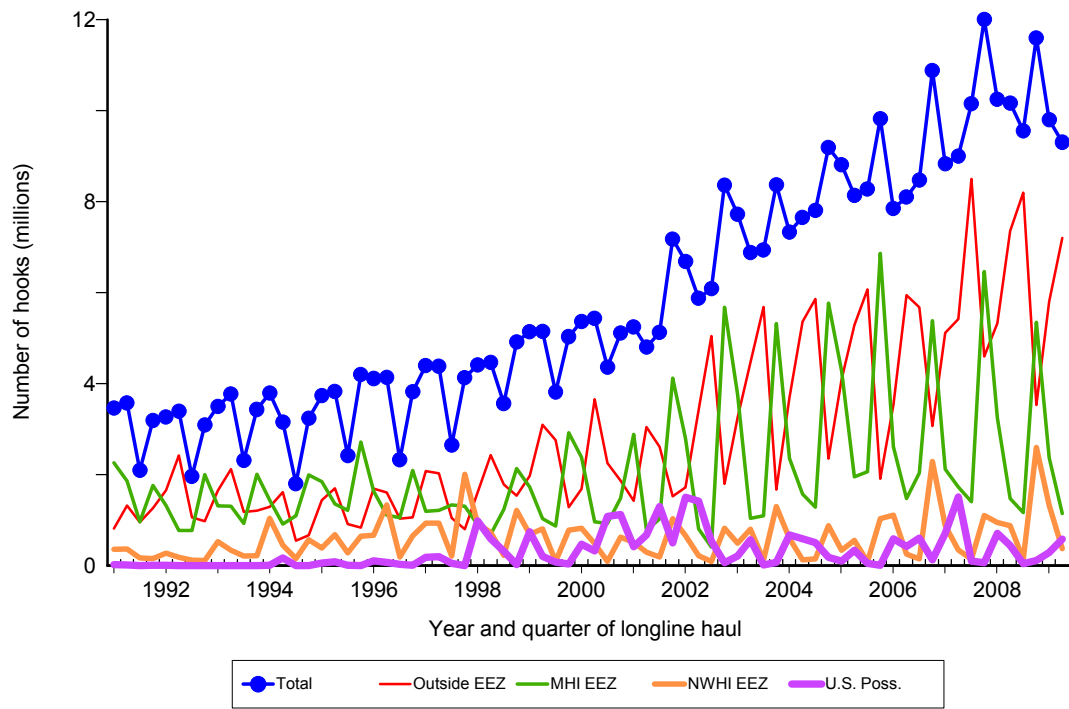


Figure 3. Number of hooks set by longline vessels based and landing in Hawaii, by quarter and fishing area, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:39:49PM]

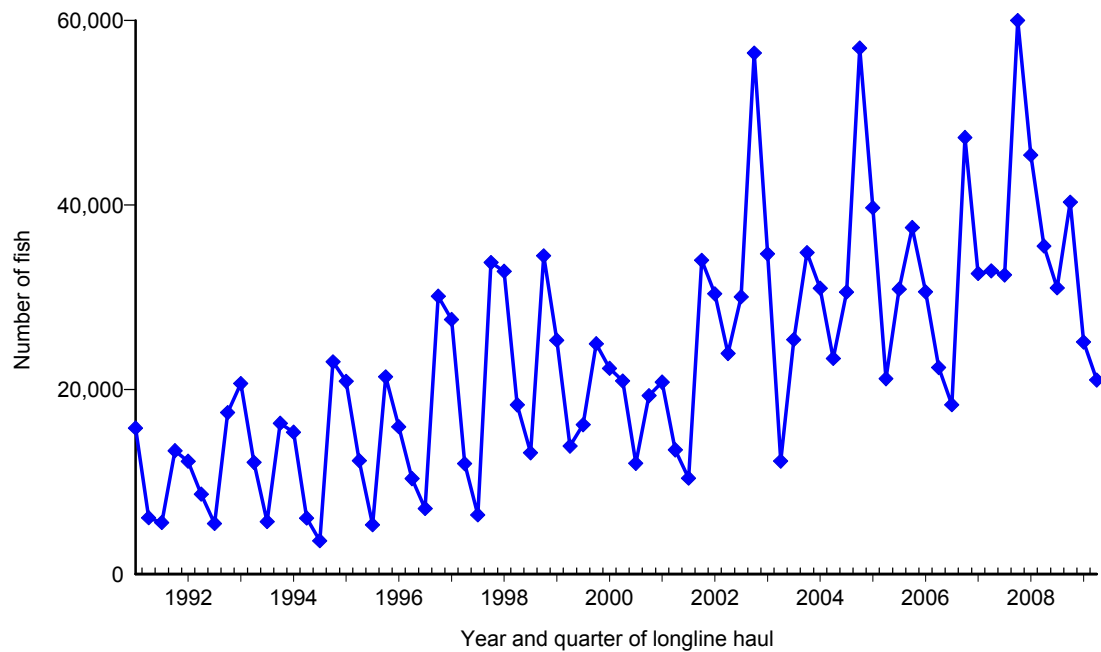


Figure 4. Quarterly catch of bigeye tuna by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:42:14PM]

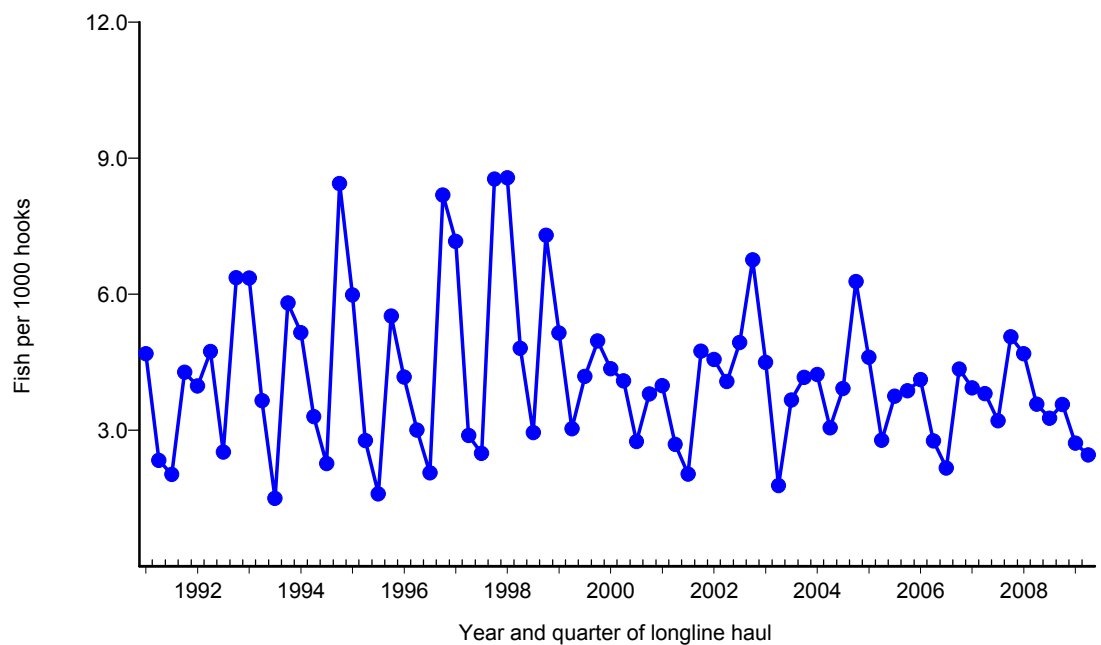


Figure 5. Quarterly CPUE of bigeye tuna (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:42:14PM]

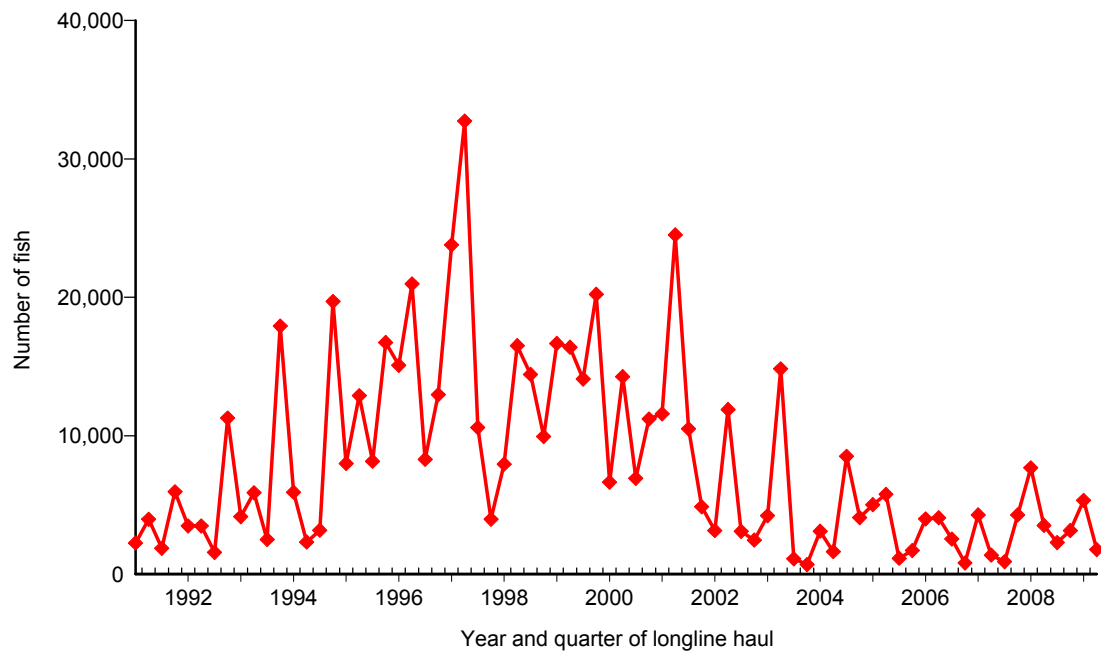


Figure 6. Quarterly catch of albacore by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:44:52PM]

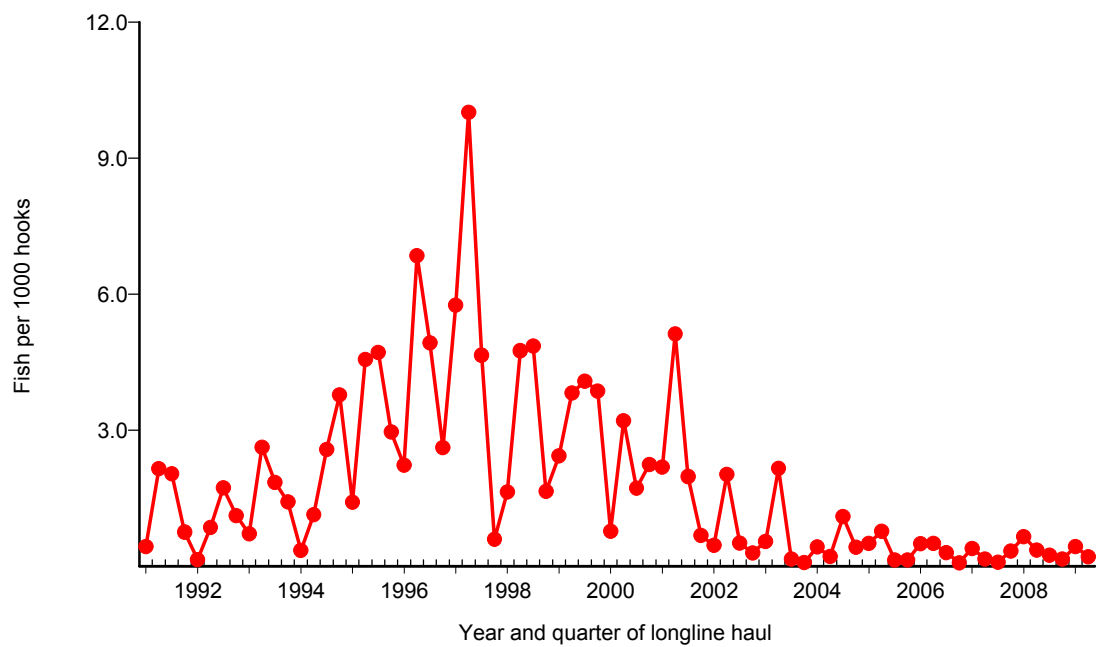


Figure 7. Quarterly CPUE of albacore (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:44:52PM]

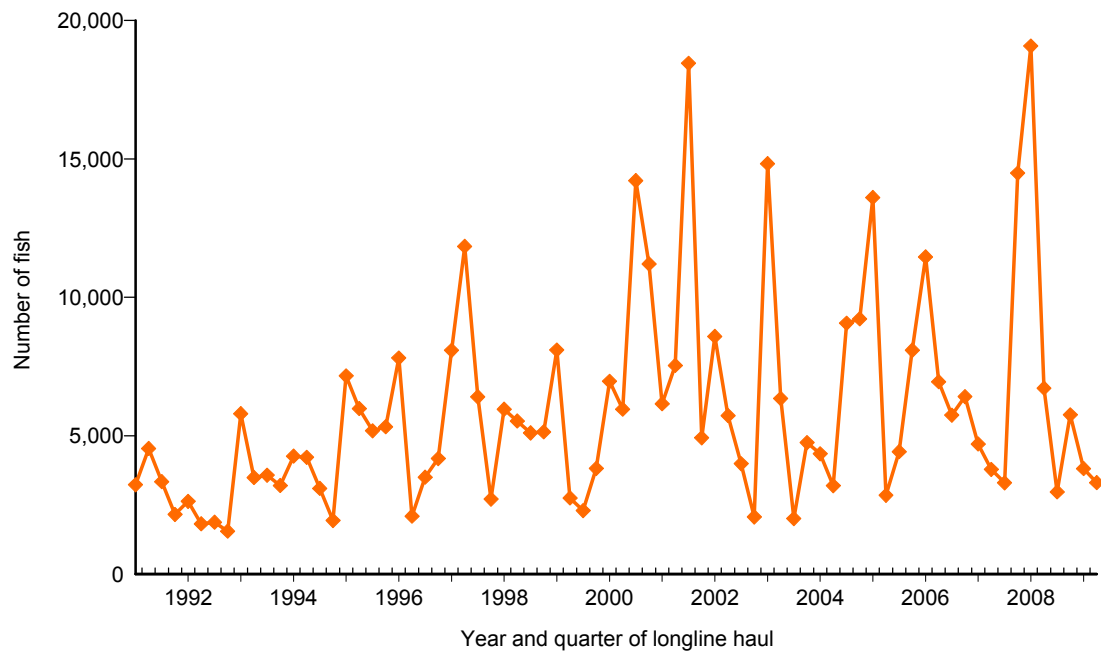


Figure 8. Quarterly catch of yellowfin tuna by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:45:23PM]

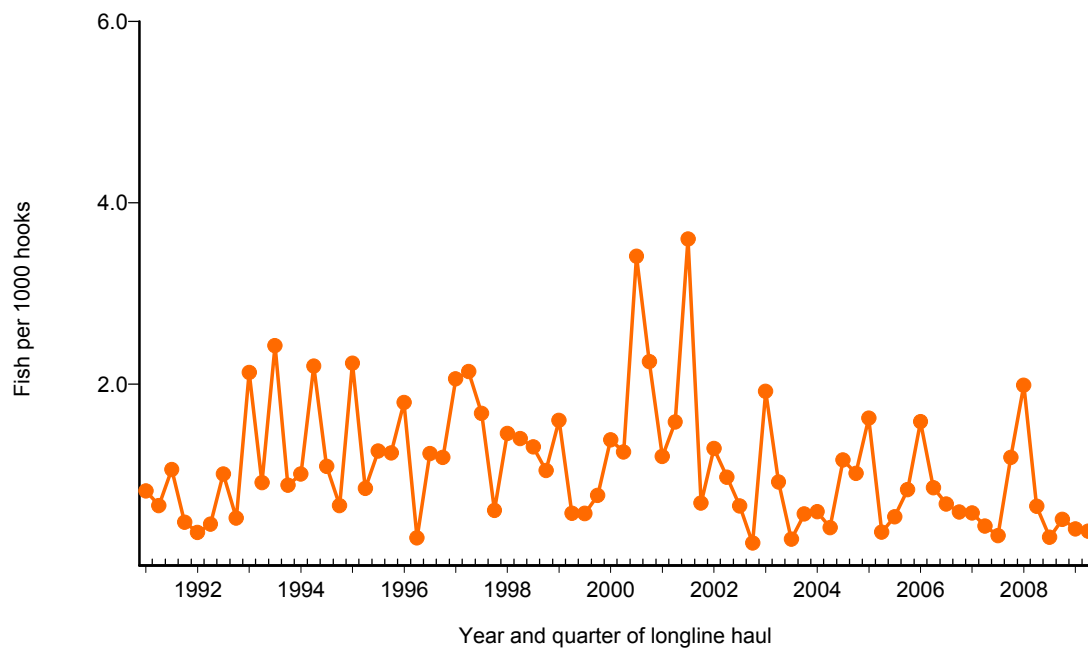


Figure 9. Quarterly CPUE of yellowfin tuna (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:45:23PM]

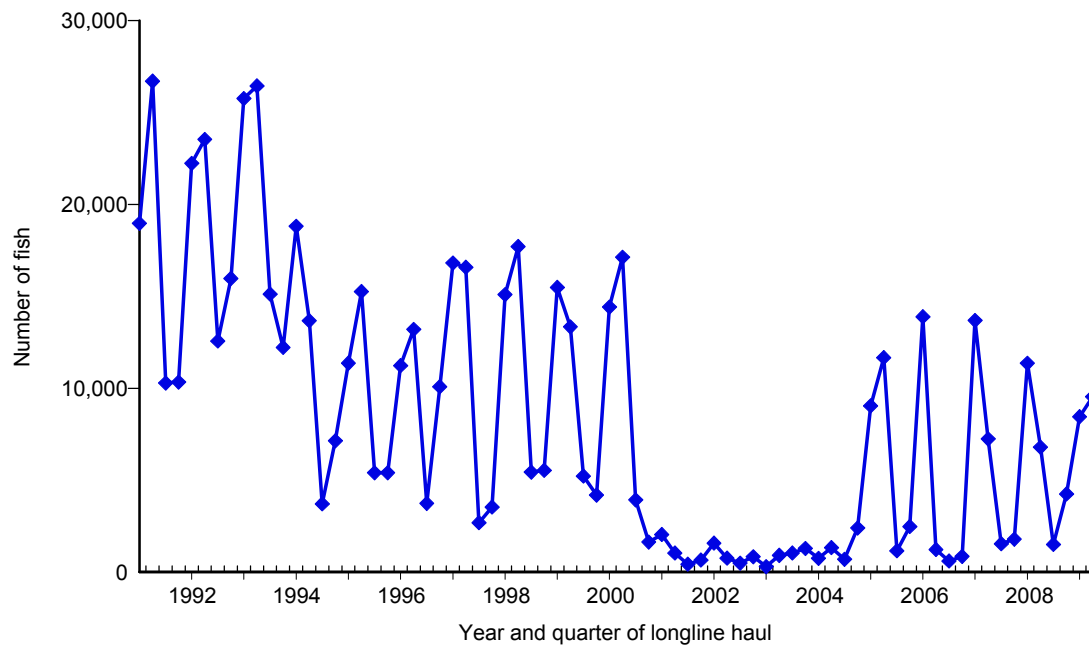


Figure 10. Quarterly catch of swordfish by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:45:56PM]

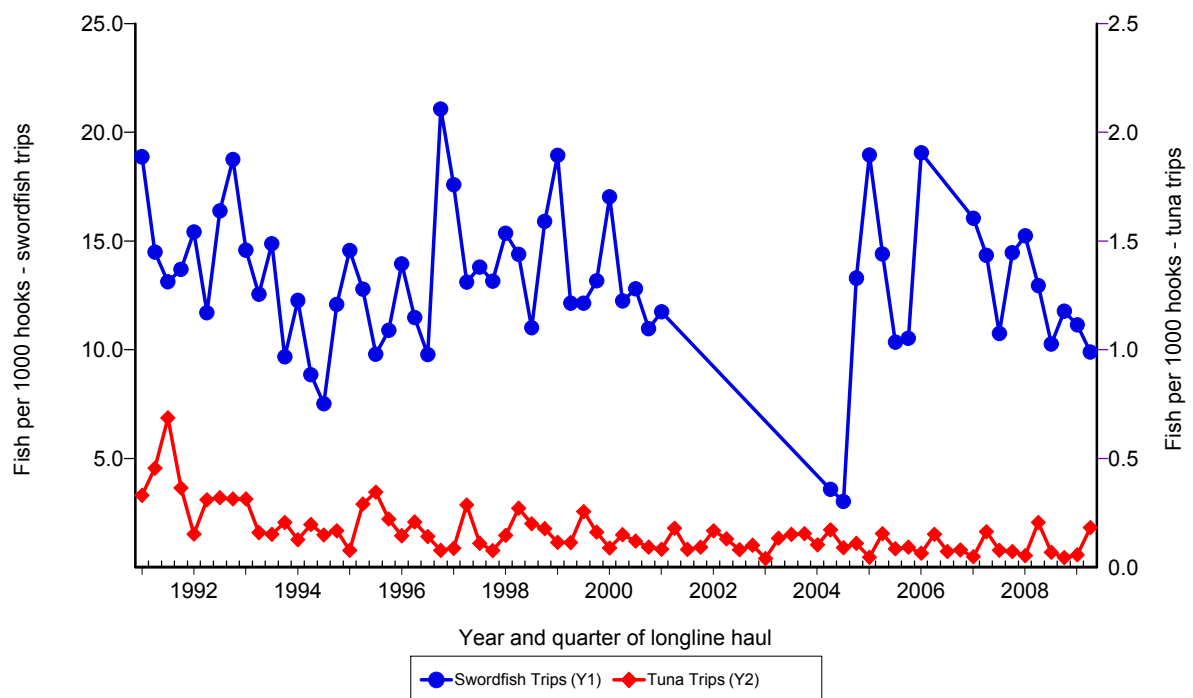


Figure 11. Quarterly CPUE of swordfish (fish per 1000 hooks) on swordfish trips and tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:45:56PM]

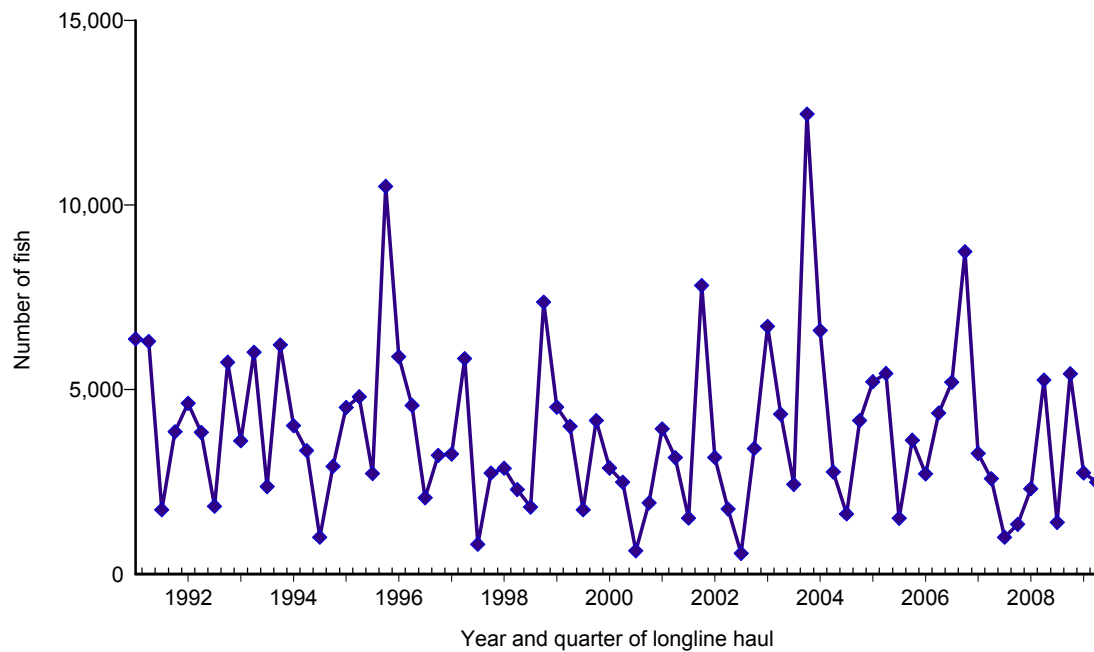


Figure 12. Quarterly catch of striped marlin by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:46:28PM]

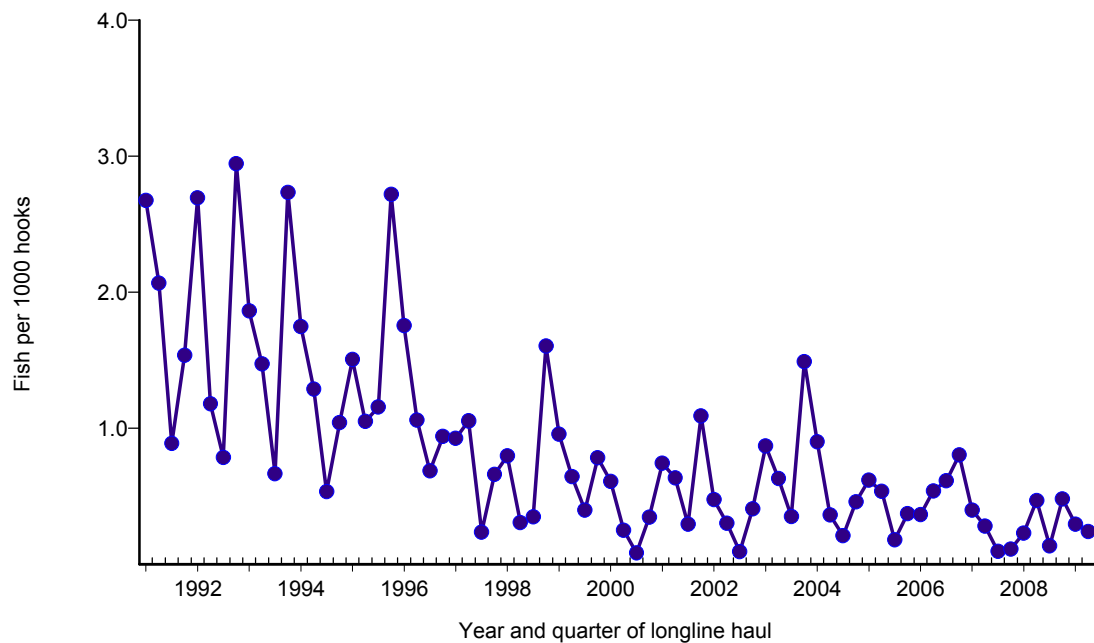


Figure 13. Quarterly CPUE of striped marlin (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:46:28PM]

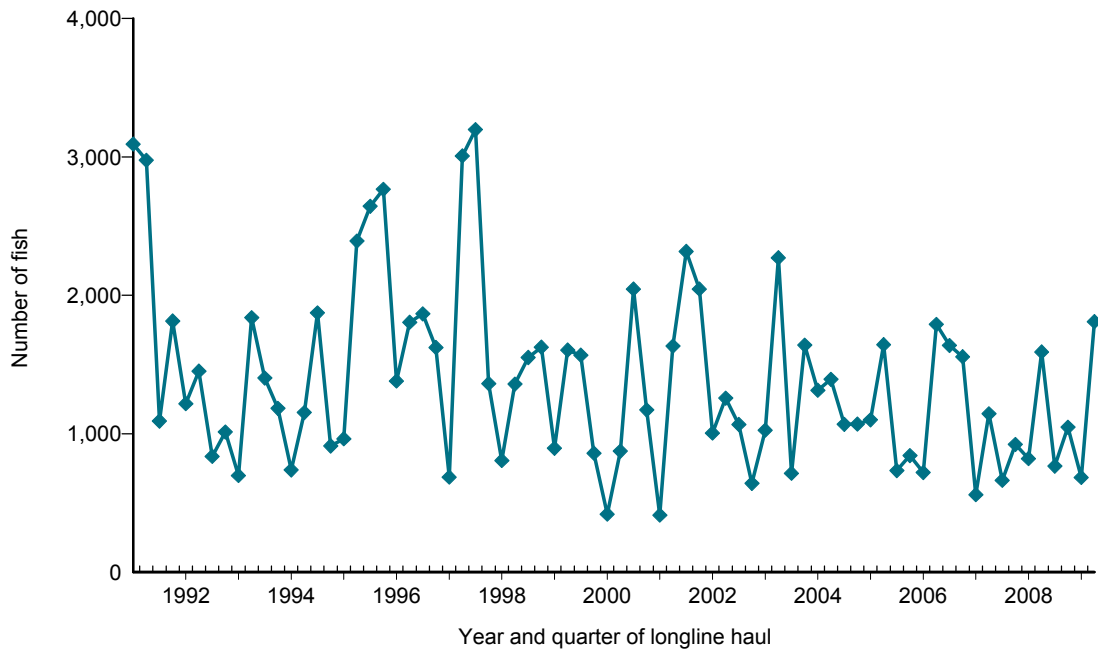


Figure 14. Quarterly catch of blue marlin by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:46:55PM]

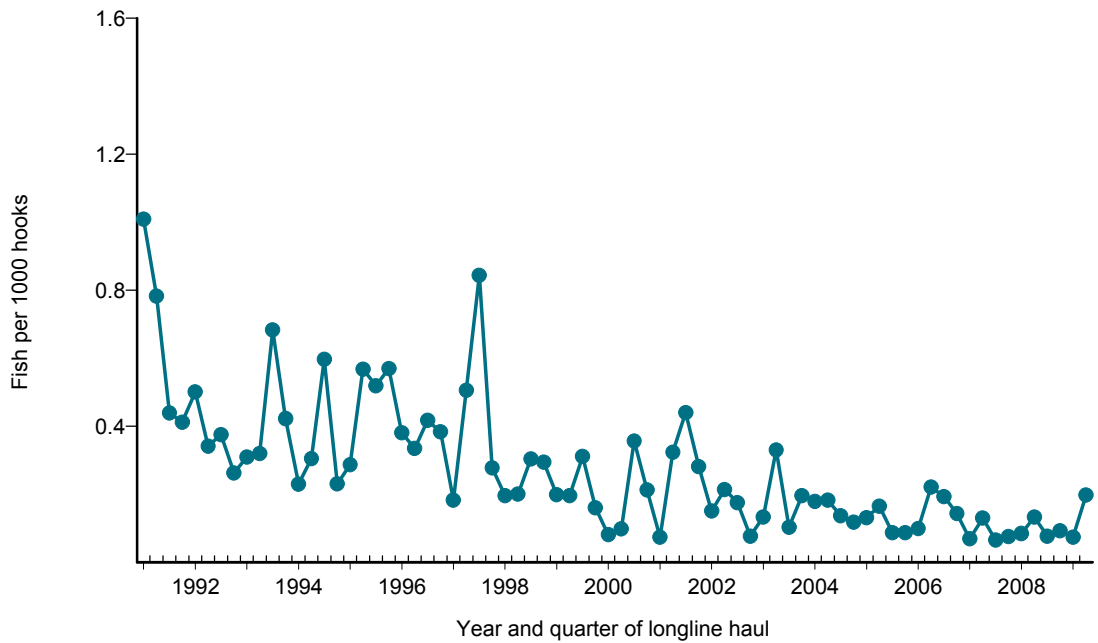


Figure 15. Quarterly CPUE of blue marlin (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:46:55PM]

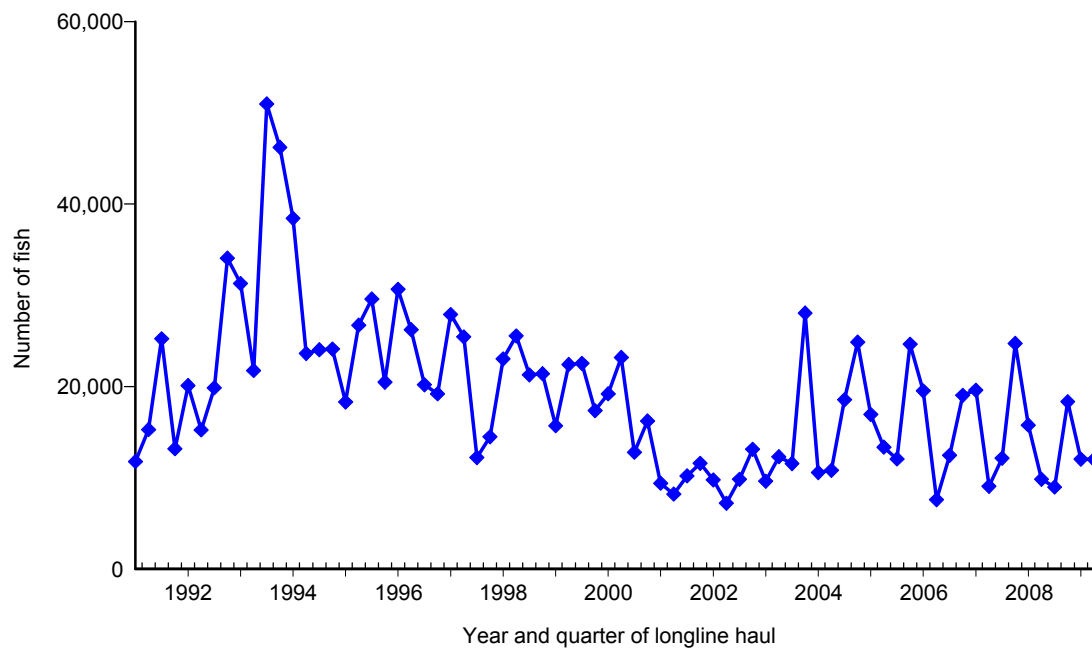


Figure 16. Quarterly catch of blue shark by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:47:21PM]

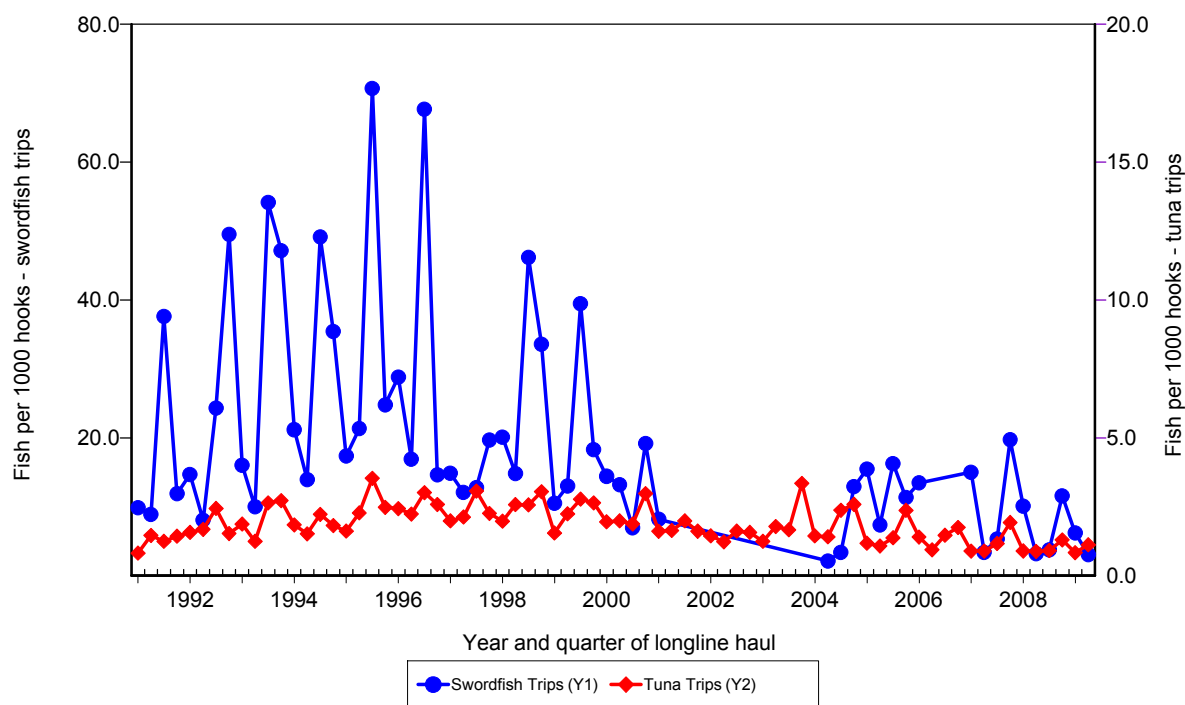


Figure 17. Quarterly CPUE of blue shark (fish per 1000 hooks) on swordfish trips and tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:47:21PM]

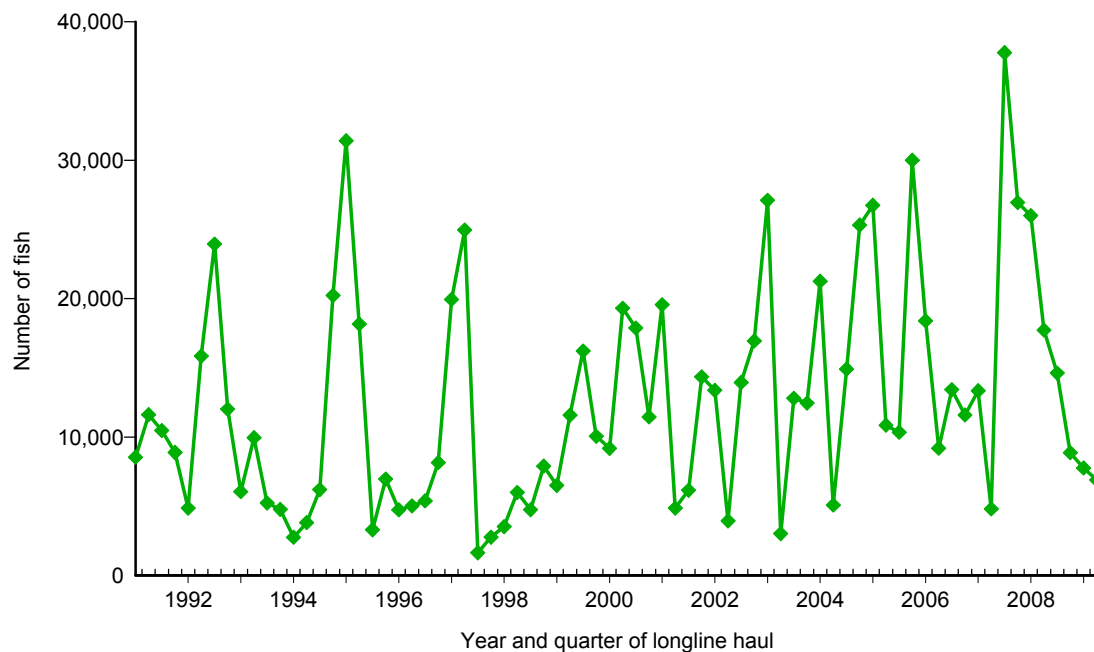


Figure 18. Quarterly catch of mahimahi by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:47:57PM]

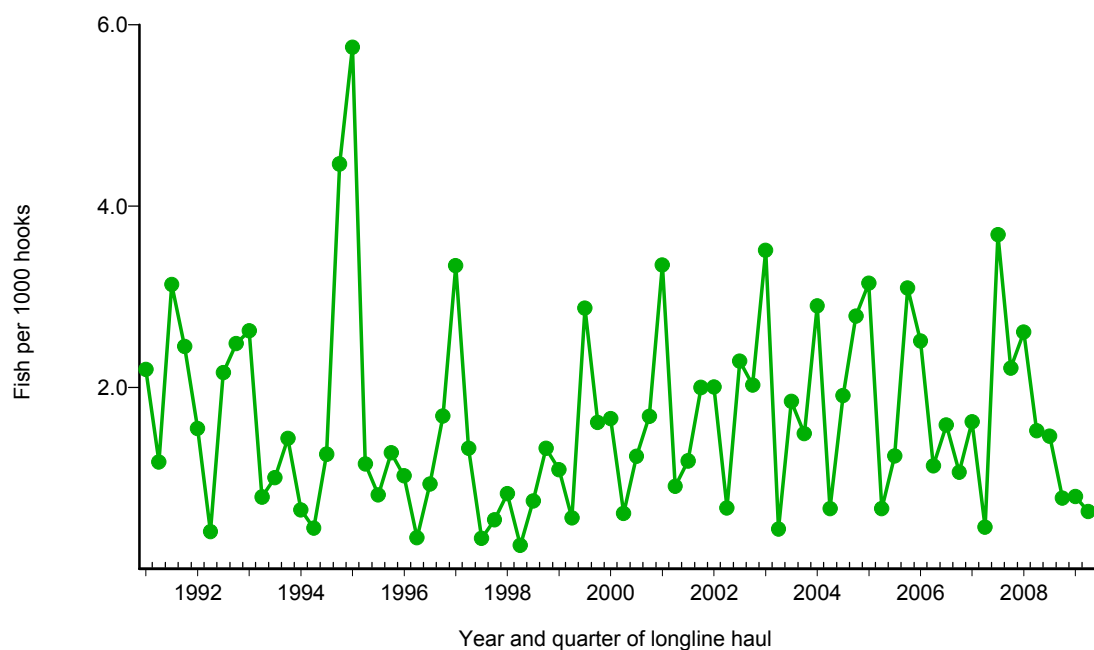


Figure 19. Quarterly CPUE of mahimahi (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:47:57PM]

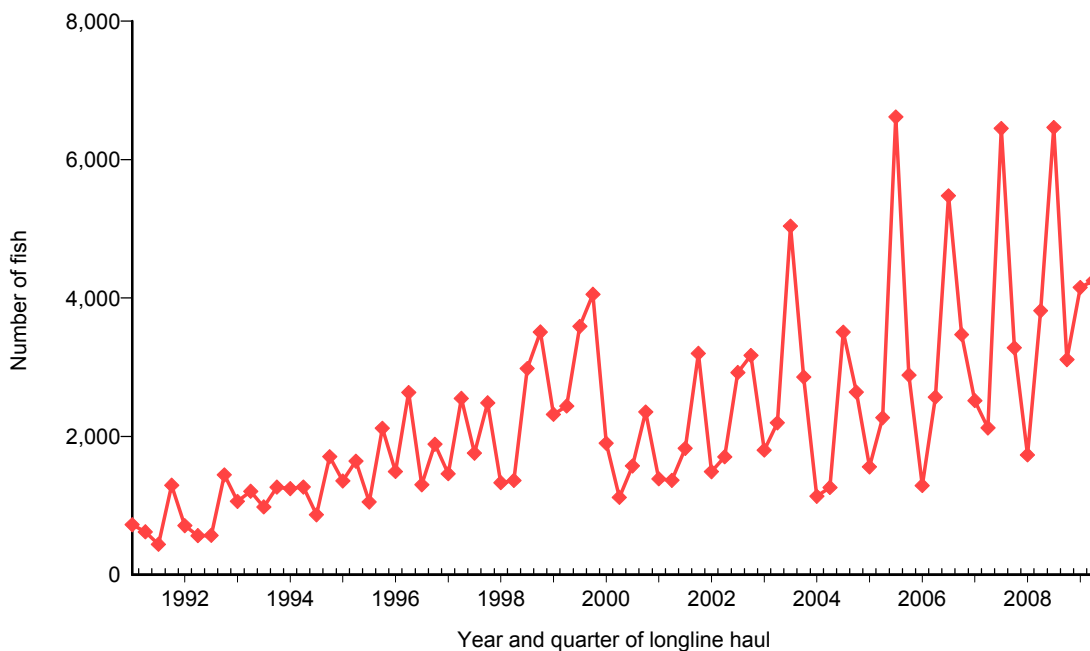


Figure 20. Quarterly catch of moonfish by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:48:23PM]

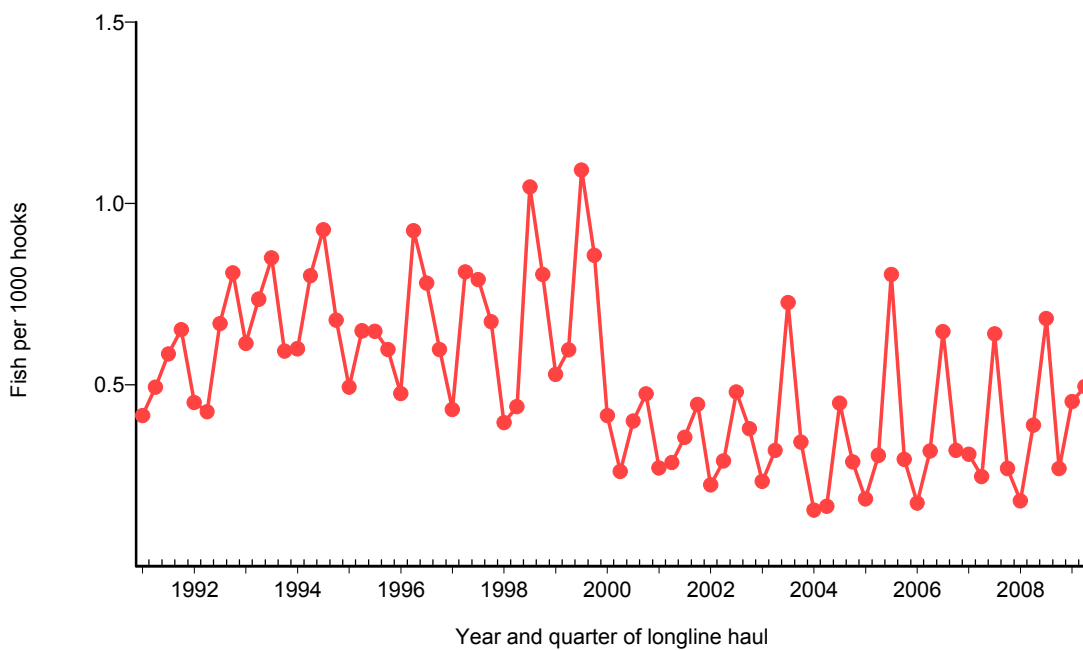


Figure 21. Quarterly CPUE of moonfish (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:48:23PM]

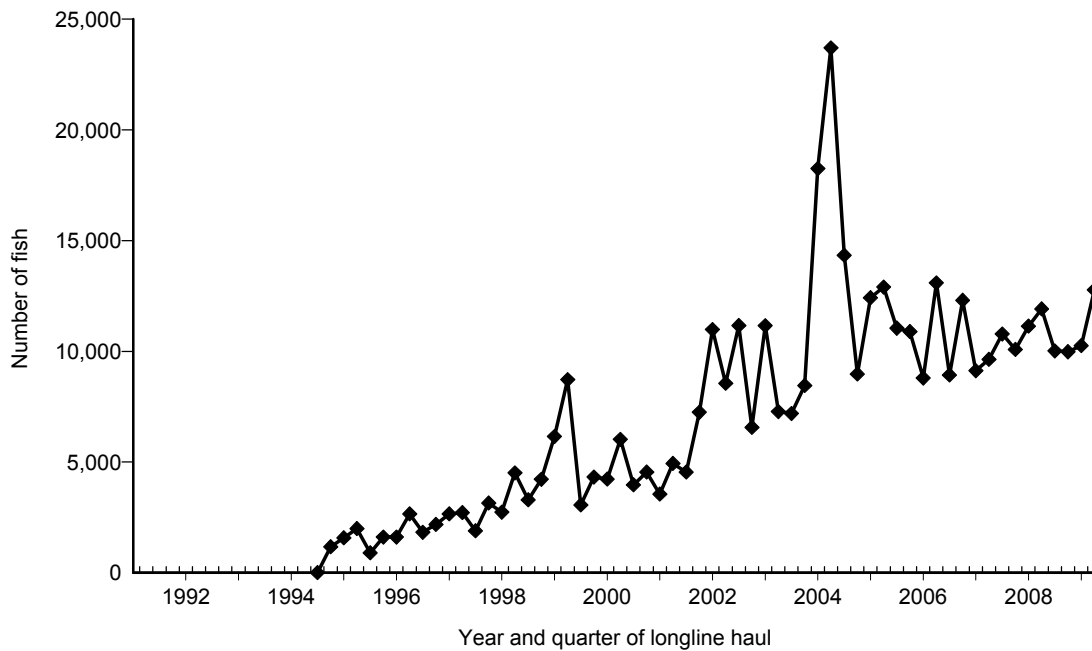


Figure 22. Quarterly catch of pomfret by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:49:15PM]

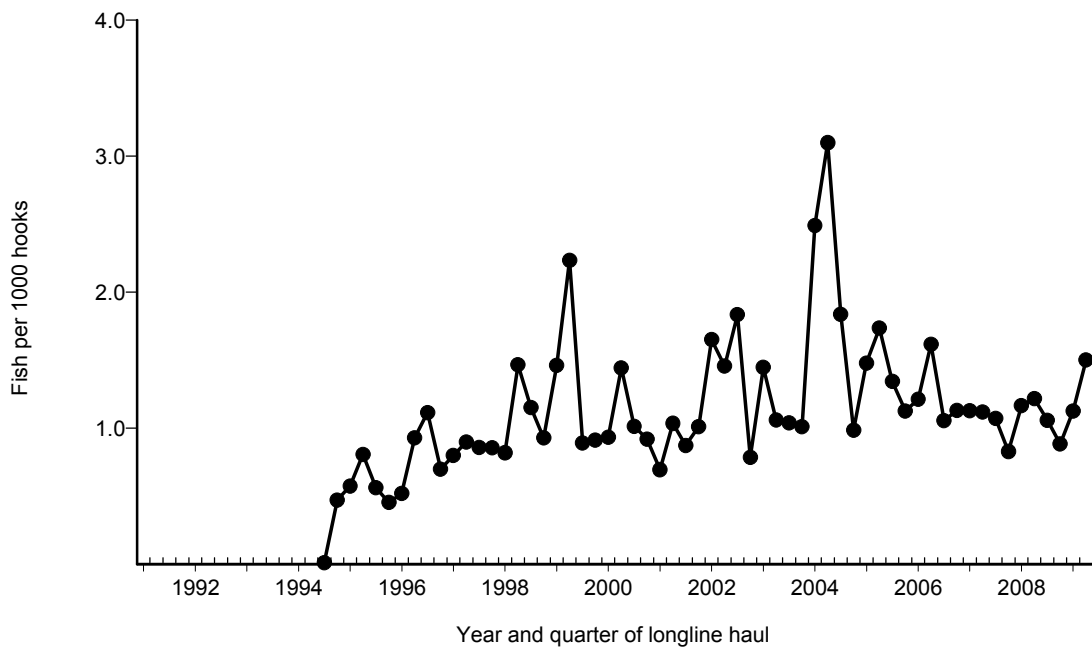


Figure 23. Quarterly CPUE of pomfret (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:49:15PM]

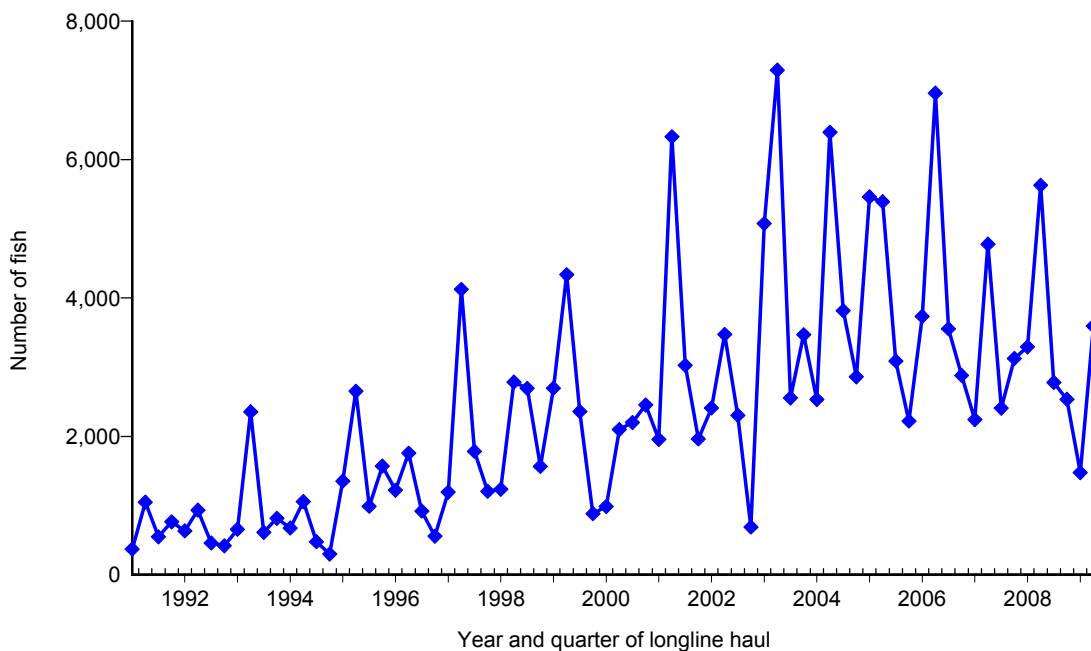


Figure 24. Quarterly catch of wahoo by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:49:47PM]

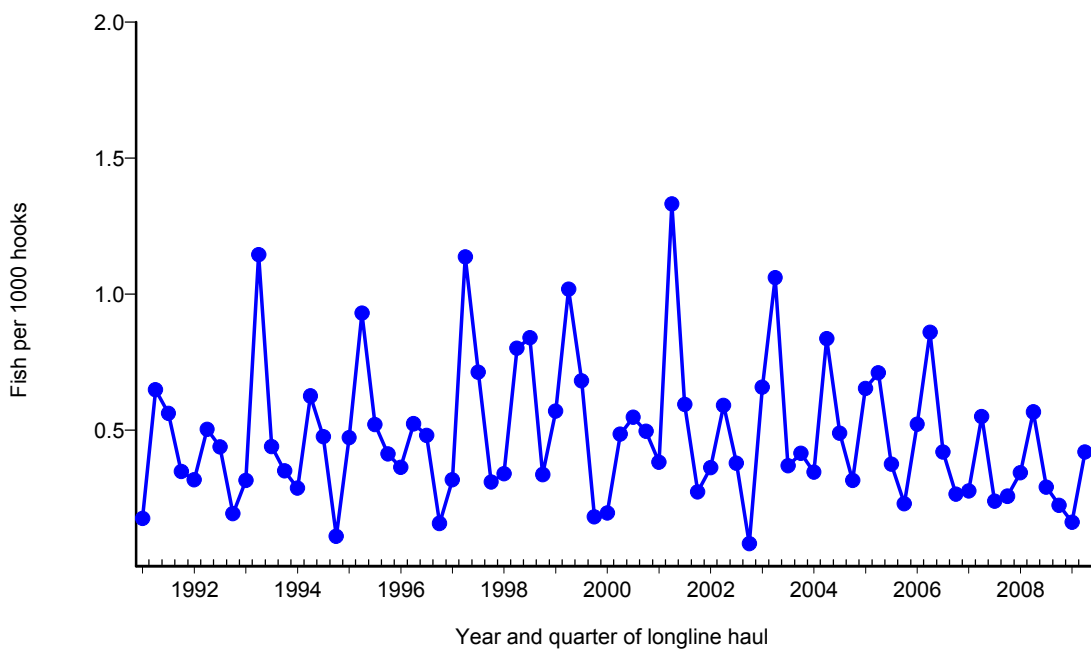


Figure 25. Quarterly CPUE of wahoo (fish per 1000 hooks) on tuna trips by longline vessels based and landing in Hawaii, 1991-2009. [PIFSC IMS, Longline Logbook Data, 8/18/2009 12:49:47PM]